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ABSTRACT

The author examines the current low level of vocational training for mentally retarded adults and describes a program at the University of Washington in which 63 retarded adults were trained as food service workers. The project was replicated in a collaborative arrangement between a sheltered workshop/activity center and a local hospital. The program involved graduation to on site training in dishwashing, bussing, and utility-maintenance. Specific vocational skills as well as personal and social skills (such as grooming, bus riding, and time management) were emphasized. Training time, cost, and employment statistics are reported, indicating that 35 of 39 persons trained and placed in jobs during the project are currently employed. Among conclusions noted are that mentally retarded adults respond to a direct approach toward terminal employment objectives and that prevocational training for post high school adults may be costly, unnecessary, and nonproductive; that most performance problems can be reduced or eliminated through training; that behavioral standards for mentally retarded adults should be the same as for nonretarded adults; and that there are disincentives in the welfare system for vocational education programs for mentally retarded adults. Recommendations are listed for parents and advocates as well as for educators in secondary and postsecondary schools. (CL)

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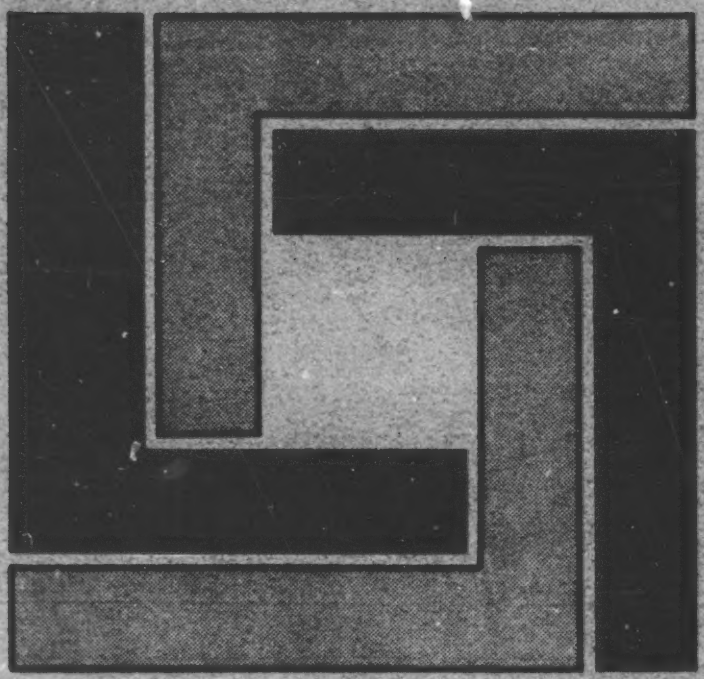

POSTSECONDARY VOCATIONAL EDUCATION FOR MENTALLY RETARDED ADULTS

JAMES W. MOSS

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POSTSECONDARY VOCATIONAL EDUCATION FOR MENTALLY RETARDED ADULTS

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1980

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This report is dedicated to the 73 severely and moderately retarded young men and women who participated in the program.

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POSTSECONDARY VOCATIONAL EDUCATION FOR MENTALLY RETARDED ADULTS

I. INTRODUCTION

Historical Perspective

The attitudes and prejudices which shape the lives of handicapped individuals in the United States are deeply rooted in religious and moral ethics of the middle ages. Almost without exception, no other segment of America's people is so affected by history as those with physical and mental limitations. From the 19th century to the present, individuals with disabilities have been shunted into segregated facilities, provided with separate and inadequate educational opportunities, deprived of the opportunity to earn reasonable wages, and considered an embarrassment to a society which places a premium on physical beauty.

The churches of the middle ages, the poor laws of Elizabethan England, the Puritan principles of the value of work and evils of idleness, and the work houses and alms houses of the 19th century all provide the foundations for attitudes which shape today's programs. To further complicate matters, generations of researchers, studying retarded individuals in intellectually and culturally sterile institutions, reached conclusions about retarded persons which led to reduced expectations which appear inappropriate for individuals reared in other environments.

The disabled adult of the mid-19th century, lacking employable skills and unaccepted by the community, found employment only in sheltered settings. The earliest recorded workshops for the handicapped in the United States were extensions of educational programs for children. Schools for the blind, faced with the problems of high unemployment among their graduates, opened "industrial" departments to provide employment opportunities. In general, these early efforts by schools to operate sheltered workshops were unsuccessful, most closing within a decade.

At about the same time, the mid-1840's, another avenue for sheltered employment was opening for the handicapped. In 1845 the St. Vincent de Paul Society opened its first "service unit" in St. Louis, Missouri. The purpose was to aid the needy and the handicapped through the collection, renovation, and distribution of old clothing and household furnishings. Employment of the handicapped in these early workshops was more a by-product than a primary purpose. As with the workhouses, there was a general sense that welfare should be earned and idle hands kept busy.

Thirty years later, in Philadelphia, the first independent workshop with a sole purpose of providing employment for the handicapped was established. This was the Pennsylvania Working Home for Blind Men, an outgrowth of one of the earlier "industrial departments" of a school for the blind. The first state supported sheltered workshop, the California Industrial Home for the Adult Blind, was established in 1885 in Oakland, California.

During the same period, the latter half of the 19th century, non-religious, charitable organizations and societies became involved with programs to employ the handicapped. In 1877 a sewing work room was established in Boston, primarily to occupy the time of poor women. Wages were paid from charitable

contributions and the products were given away. Later, as financial difficulties emerged, products were sold to generate wages. This shop later became a workshop for the handicapped.

By the turn of the century, the Salvation Army, the Volunteers of America, and the Goodwill Industries had all begun operations, mostly for the benefit of the poor but offering some employment to the handicapped.

Vocational opportunities for mentally retarded adults lagged a full century behind the early programs for the blind. Although many of these individuals may have been involved in the generalized welfare shops, most of the more severely retarded were removed from the communities and placed in institutions. Unlike children who were deaf, blind, or otherwise physically disabled who returned to their communities as adults, mentally retarded children grew into adulthood in out-of-sight, out-of-mind institutional settings. The first community workshop of record specifically for mentally retarded adults was established in San Francisco in 1951. Aided by Federal funds, shops for mentally retarded adults grew rapidly. By 1968 the Department of Labor had certified 468 workshops. By 1972 the number almost doubled.

Sheltered workshops became a way of life for the handicapped in the latter half of the 19th century and stayed with us as the expected terminal employment for another century. Born of welfare, bred through charity, these shops "protected" the handicapped from the stresses of an industrial society.

During this same period, a bureaucracy of care was being developed which today permeates the social system. Service agencies at local, state, and federal levels have developed over the years to care for the disabled, resulting in the isolation of the handicapped from their less disabled peers. These caring bureaucracies justify their existence because of the needs of disabled persons. The needs of the disabled and the needs of the caring bureaucracies form a symbiotic relationship, the disabled depend upon the bureaucracies and the bureaucracies depend upon the disabled. This has resulted in a restriction of services to the disabled by limiting services to those which could be provided by the specific caring bureaucracy. Generic systems which might have participated in the care and treatment of disabled persons were discouraged from doing so by funding mechanisms which restricted funds to specific types of facilities. Legislation, written to provide benefits to disabled persons, also mandated that specific types of agencies be established within each state to assure appropriate control of the funds and the programs. Along with the required state agencies, advisory committees were mandated which were important to those individuals in the service system.

Thus, the attitudes and prejudices which developed from the middle ages and which reflected a protecting and caring society, still operate to protect disabled persons and the systems which serve them.

Vocational Education and Rehabilitation

Concern with the employment of handicapped adults involves two quite separate concepts: vocational education and vocational rehabilitation. The project discussed in this report represents "vocational education," not vocational rehabilitation. The difference between these two is worthy of consideration.

Although there may often be overlapping functions, the field of vocational rehabilitation is primarily involved in matching the skills of handicapped persons to the requirements of various jobs. Therefore, considerable attention is paid to vocational evaluation to determine the skills, strengths and weaknesses of the client. In sophisticated systems, computerized job banks may be used

where the characteristics of the client can be better matched against a large number of possible positions. When a match is made, the client is placed on the job and monitored for approximately two months to make sure the match is appropriate. In some situations, a determination is made that the client requires additional training in order to reach a vocational goal. When this occurs, arrangements are made to enable the client to attend an established training program. Such training may be paid for by funds made available through the vocational rehabilitation system but is neither operated nor managed by vocational rehabilitation specialists.

Vocational education, on the other hand, is not as interested in determining what a student or trainee can do at the point of referral but what might be accomplished through effective training. Instead of trying to match the capabilities of the student to a wide variety of jobs, the vocational educator is more likely to identify a specific job in which the student has expressed an interest and train for competency in that job. More often than not, the vocational educator is actively involved in the training process. When a student completes a training program, the vocational educator generally provides on-the-job training and follow-up to assure that the student can cope with the demands of the job in the real setting.

The two programs clearly provide different but equally valuable services to handicapped people. There are many handicapped people who have appropriate skills for employment but who need assistance in finding the right job. The services offered by the vocational rehabilitation field are both necessary and adequate for such individuals. There are other handicapped adults who lack the skills required for employment. For these individuals, the services of vocational education are essential.

Mentally retarded adults, particularly those in the moderate and severe ranges, typically have been the concern of the vocational rehabilitation field. Since these individuals generally lacked employable skills, job matching was often unsuccessful and the clients were referred to sheltered workshops. Unfortunately, vocational educators have not been active in the development of programs for this group. Hopefully, the results of this study will encourage professionals in the field of vocational education to begin applying their many skills to the vocational problems of mentally retarded adults.

Project Purpose

The overall objective of this project was to test the hypothesis that currently available educational technology could be applied to moderately and severely retarded adults to enable them to develop job skills necessary to permit competitive employment. As with many long term, multiple year research and development efforts, the specific objectives of this project evolved from one year to the next as original objectives were achieved and others emerged. The chronology of objectives follows a familiar pattern in research and development activities with initial objectives relating to the development of new knowledge and terminal objectives leading to acceptance of new practices by relevant state and local agencies.

The operational objectives, as they evolved throughout this project, can be described as follows:

1. Research to determine whether or not training technologies and placement procedures currently available or modified by the project would lead to long term employment of moderately retarded persons in the competitive sector.
2. Continued training and placement to accumulate sufficient data to convince the project staff of the validity and reliability of the process.

3. Involvement of state, county, and local governmental decision makers in an evaluation of the project.
4. Development of a replication of the project in a community setting and involvement of the state, county and local governmental decision makers in an evaluation of the replication.
5. Establishment of new terminal objectives based upon the success of the replication. These called for the acceptance of postsecondary vocational training as an appropriate alternative for mentally retarded adults by those responsible for the management of such facilities.
6. Establishment of vocational training models for the mentally retarded in community college and vocational/technical institute environments.
7. Identification of operational patterns, rules and regulations governing state funding which must be changed to facilitate widespread adoption of post-secondary vocational programs for mentally retarded persons.
8. Development of technical assistance resources to assist other community colleges and vocational/technical institutes to develop similar programs.
9. The final step in this sequence is an evaluation of the program to determine the economic and practical feasibility of continuing such programs and to review additional barriers which might impede further development.

At the present writing, this project has gone through all of the steps up to but not including the development of model programs in community colleges and vocational/technical institutes. The purpose of this report is to describe the procedures and results at the end of four years of support under the Special Project authority of the Developmental Disabilities Act.

The research/development/dissemination/implementation model described above is quite effective for inducing change into society. Unfortunately, it is a long term process which requires consistency of leadership and financial support over a five to eight year period. Many federal agencies are hesitant to provide support for such a continuing period of time. There is a tendency on the part of many federal funding agencies to support research and development on a short term basis which may result in the answering of research questions but fail to facilitate the acceptance of such results into general practice. The Rehabilitation Services Administration which supported this project initially under the Special Projects authority of the Developmental Disabilities Act and subsequently under the Projects with Industry authority of the Rehabilitation Services Act, deserves the highest praise for allowing the project to continue long enough to approach its terminal objectives.

In summary, the specific objectives of this project changed as results were achieved and experience gained. It would have been impossible at the outset to have predicted the terminal objectives which finally emerged. The initial objective was to test the hypothesis that specific training procedures, specific placement procedures, and a specific orientation toward mentally retarded individuals would lead to employment in competitive industry for such persons. A second objective tested during this grant period was that the procedures could be replicated in a different site and operated by non-university personnel.

As with most research and development efforts, the objectives yet to be tested are more exciting than those of the past. The final objectives of this project will be met when mentally retarded persons have the same opportunities as everybody else for vocational training which will lead to productive, competitive employment.

Related Research

If one picks up a typical textbook on education and training of the mentally retarded, several significant factors become apparent. First, the emphasis is usually on elementary and secondary education with little or no orientation toward vocational training or employment. Second, and perhaps more important, is the general acceptance of a point of view that postsecondary educational institutions have little if anything to offer to this population.

A recent book (Appleby, 1978) reports on the results of a study to "investigate and assess the vocational training and employment possibilities of persons with severe permanent handicaps" (preface). This report contains descriptions of 152 training programs located in (a) secondary educational institutions or programs, (b) postsecondary educational institutions or programs, (c) rehabilitation facilities, (d) day care centers, (e) residential facilities, and (f) other settings.

Thirty of the vocational training programs (20%) took place in secondary education programs. Presumably, since the study reviewed programs which started with children as young as 14 years of age, these were secondary school pupils. Only 10 of the programs (7%) were found in postsecondary educational institutions. Thus, 112 of the 122 postsecondary programs (92%) reported in this survey were operated by agencies and organizations which were not a part of the normal vocational education system to which non-disabled persons turn for such training.

Furthermore, an examination of the ten programs located in postsecondary educational institutions showed that five of them were accredited by state rehabilitation agencies as rehabilitation facilities, not as vocational training facilities. These five programs offered what appears to be standard rehabilitation services, including in one setting, the operation of a sheltered workshop. Only two of the ten programs operating in postsecondary educational settings were actually accredited by the state Office of Vocational Education. The program descriptions provided by Appleby underscore the failure of vocational educators to consider the needs of the mentally retarded.

Another recent book with a focus on vocational preparation of mentally retarded adults (Brolin, 1976) devotes a chapter to "A postsecondary rehabilitation program model" but says little about the role of postsecondary educational models. Brolin indicates "although there are some community college, vocational/technical schools and manpower programs that offer vocational programs for certain retarded individuals, the most common type of agency available for postsecondary career education preparation is the rehabilitation facility or workshop" (p. 213).

A 1977 book on educational programming for the severely and profoundly handicapped (Sontag, 1977) contains a chapter on secondary and adult populations but makes no reference to postsecondary educational institutions. Again, the focus is upon the role of sheltered workshops which serve mentally retarded adults.

Postsecondary opportunities for non-retarded handicapped students have been available for many years. Many physically disabled persons have been able to go to college through support from the Vocational Rehabilitation Act. Specialized programs for deaf students have been available in community colleges and technical schools for a decade. Gallaudet College and the National Technical Institute for the Deaf are two specialty programs serving deaf persons exclusively.

Public Law 94-142 has had a significant impact on the education of handicapped children and youth through the elementary and secondary years.

However, there is nothing in such legislation which requires the postsecondary educational system to admit handicapped persons or to develop specialty programs for such persons. There are funds allocated for handicapped students in the Vocational Education Act but these have not always been used to provide training leading to employment. Section 504 of the Rehabilitation Services Act prohibits discrimination against handicapped persons but does not require that special services be made available to make postsecondary training possible for mentally retarded persons.

One of the most important requirements of P.L. 94-142 is that children be educated in the "least restrictive environment." Thus, the elementary and secondary schools must make an attempt to provide educational services to handicapped children in regular classes with their more normal peers. As children leave the secondary schools, however, and move into training for employment, the importance of this requirement is lost. The primary and apparently preferred setting for postsecondary education for mentally retarded adults is a segregated rehabilitation facility. Unfortunately, the history of rehabilitation facilities as vocational training institutions is hardly encouraging.

Training in Rehabilitation Facilities

Two recent studies have provided valuable information on the role of sheltered workshops and activity centers in the training of handicapped individuals. These are The Role of the Sheltered Workshops in the Rehabilitation of the Severely Handicapped, by the Greenleigh Associates (July 1975) and the Sheltered Workshop Study, by the Department of Labor (June 1977).

The Labor Department data indicate that 2,766 workshop certificates were held at the end of the second quarter of 1975. The Greenleigh report estimates that over 410,000 are served annually in workshops with an average daily attendance of approximately 140,000 although as many as 174,000 are listed as enrolled at any one time. The DOL study estimates 145,422 served daily with more than 400,000 served annually. The figures from the two studies are quite comparable.

Table 1.0 of the DOL study gives an unduplicated total average daily attendance for sheltered workshops, activity centers and evaluation programs in 1972 as follows (page A-1):

TABLE I

Number of Clients in Sheltered Workshops,
Activity Centers, and Evaluation Programs

Type of Shop	Total	Client Orientation		
		General	Mental Ret.	Other
Total	98,076	38,669	44,353	15,054
All Regular Workshops	36,978	24,389	5,210	7,379
All Activity Centers	46,273	5,687	34,517	6,069
Training and/or Evaluation	14,825	8,593	4,626	1,606

The "other" category in Table I includes specialty sheltered workshops for individuals who are alcoholic, blind, mentally ill, and other unspecified programs. The figures in this table differ from the previously stated figures which place average daily attendance at about 140,000. The latter figure was based upon more current data. These figures demonstrate that although the mentally retarded make up approximately fifty percent of the population of sheltered workshops in general, the largest proportion of these are in activity centers rather than regular workshops. It can be assumed that half of the population of general sheltered workshops are also mentally retarded. This would suggest that approximately 23,000 mentally retarded individuals were in sheltered workshops in 1972. If one extrapolates to the more recent data, it can be assumed that no less than 30,000 such individuals are in workshops, exclusive of the numbers in activity centers. In all probability, a substantial number of these can be trained for competitive employment.

Both of the recent reports address the issue of training in sheltered workshops. The DOL report indicates that "few sheltered workshops are considered to be trade schools or vocational education facilities ..." (p. 105). The report further states that nearly "two thirds of the certificated regular program workshops indicated that training was dependent on the type of goods produced in the workshop" (p. 106).

A review of the staffing patterns in sheltered workshops further confirms the lack of specific job training. The Greenleigh report states the following:

> "Although workshops report having a variety of service programs for clients, the depth and quality of these programs is called into question by the small amount of professional staff funds

that is allocated to these programs in most workshops. The average workshop spent about $7,000 per year on professional staff for its evaluation program, and a similar amount on professional staff for its training program. This indicates that both services may often be conducted by non-professional staff, i.e., the production supervisors. This further indicates that evaluation, in fact, may be situational assessment conducted by supervisors, and that training largely is supervised work experience" (p.11).

The Greeleigh report further states:

"Occupational-related training is offered to a minority of workshop clients. Such training is defined here as experiential preparation for a specific industry, service occupation, or manufacturing process" (p. 10).

The State of Washington recently completed a study of its own sheltered workshops which parallels the result of the two national studies. In 1977, approximately 1,272 individuals were enrolled in sheltered workshops on an A.D.A. basis. During 1976, 1,990 individuals received services from such sheltered workshops. The state Vocational Rehabilitation agency estimates that an additional 4,700 clients were eligible for such services but did not receive them. There was an average monthly waiting list of 220 individuals who had applied for or had been referred to sheltered workshops but for whom space was not available. During the second half of 1976, 434 clients entered workshops with only 116 placed out to competitive industry. This yields a 9% discharge rate; somewhat below the national average. With an admission rate almost four times the placement rate, it would appear that some effort is required if the problem is to be kept within reasonable bounds.

It is apparent from the above studies that training in sheltered workshops concentrates on work habits and general job performance skills with little attention to specific preparation for employment. The DOL report concludes that "it may therefore be more realistic to classify most workshop training as work preparation rather than skill training" (p. 107). However, one of the characteristics of mentally retarded adults is their inability to generalize or to acquire new skills without specific instruction. Whereas "prevocational" and work preparation training may be adequate for non-retarded adults, these will not lead to jobs for severely and moderately retarded persons.

The findings of the Greenleigh and DOL studies are neither unique nor unheard of. Levitan and Taggert (1977), in writing about sheltered workshops, had this to say:

"The goal of vocational services is placement into competitive employment. One-sixth of clients had been working before entry into the workshops. Seven of ten in the workshop felt they were ready for competitive employment, and the same proportion felt they would be placed in the near future. Yet only about one client in ten was placed in 1974, representing half of all terminees. There was no correlation between services and placement, except that job-readiness training usually preceded placement. High vocational capability at entry, and less severe disabilities were the major determinants of placement success. It is estimated that more than one in seven terminees are subsequently readmitted, suggesting that many fail after a period in competitive employment. Furthermore, it has been asserted by some that workshops tend to discourage mobility of their most productive employees in order to meet production quotas."

In looking at the amount of money spent by sheltered workshops for staffing compared with client earnings, Levitan and Taggert conclude: "Sheltered workshop administrations cannot ignore the charge that employment

programs designed for the disabled have apparently become employment programs for the social service workers" (p. 68).

The fact that the annual departure rate for sheltered workshops runs from 12 to 15 percent might suggest that such workshops are effective in the training of their clients in spite of the lack of specific training activities or professional staff. However, a closer examination of the record would suggest a different conclusion. Table II, extracted from the DOL study, presents a picture of the discharge rate into competitive employment when compared with the amount of time spent in the rehabilitation facility. This table shows that 75% of all clients placed from sheltered workshops into industry are placed within one year of entering the workshop. A third of these are placed within three months of entering the workshop. Although the movement of the mentally retarded from sheltered workshops is somewhat slower, 80% of all retarded clients placed are so placed within two years of entering the workshop. Reference to Table III, however, shows that by far the largest number of clients in sheltered workshops have been in such programs for more than two years, after which the discharge rate drops to almost 3%. When one considers that almost half the clients placed from sheltered workshops into competitive employment are so placed within six months of entering the program, it is more rational to conclude that the clients were generally "work ready" at the time they entered the program and that training was not a significant factor in their placement.

TABLE II[1]

Percent of Clients Discharged Related to Time in the Rehabilitation Facility

Time in Facility	All Workshops	General Workshops	Mentally Retarded
Under 3 months	22.2	22.6	11.2
3 to 6 months	26.5	25.1	17.1
6 to 12 months	26.0	26.7	27.1
12 to 24 months	14.6	14.5	24.6
24 to 28 months	5.9	5.2	14.5
Over 48 months	4.9	5.4	6.0
Percentage Returned	14.0%	11.0%	19.0%

[1] Taken from Table 98.1, Sheltered Workshop Study, Statistical appendix, pp. A-583—A-585.

TABLE III

Tenure in Rehabilitation
Facilities - 1972

Type of Facility	Less than 6 months	6-12 Months	1-2 Years	2-3 Years	3-5 Years	5-10 Years	10-15 Years	15 years & More
Regular Certified Workshop	4,152	2,513	4,408	3,871	5,056	5,280	1,622	1,202
Activity Center	5,450	4,423	9,485	7,433	7,795	5,521	958	226
Training & Evaluation	6,043	2,851	2,460	696	382	168	22	22
Totals All Settings	15,645	9,787	16,353			40,246		
Placed in Competitive Employment	5,726	3,051	1,712			1,259		
Percent	36.6%	31.2%	9.6%			3.1%		

The conclusions reached by the Greenleigh and DOL studies are not new. TenBroek (1969), a decade ago, criticized the sheltered workshop as an appropriate setting for vocational training. He concluded:

> "Although the combination of school and shop was found unworkable a century ago — and for good reason — something very like this combination is today in process of revival through the new linkage of sheltered shops and vocational rehabilitation. Whereas the early educators had sought to place the shops within the school, modern day agencies are in effect seeking to place the 'school' (that is, vocational rehabilitation training) within the shops. Ironically, despite the bitter experience of the nineteenth century, it is widely believed that this association of vocational training and sheltered employment is a novel and progressive idea. In fact, the intermixture of the processes of education and employment is not only a familiar and age-worn practice, but one long since discarded as unworkable. Is it any more workable in its modern dress?" (p. 262).

Vocational Training

Whereas the data on the effectiveness of sheltered workshops are hardly encouraging, data on the ability of moderately and severely retarded adults to profit from vocational instruction are quite encouraging.

There has been a reasonable amount of literature focusing upon specific training programs for the severely and moderately retarded. Gold (1972) was one of the first educational researchers to demonstrate that severely retarded adults could manage very complex assembly tasks. He was also one of the first to note that the rehabilitation literature is "concerned almost exclusively with production as opposed to the acquisition of skills" (p. 517). Gold also notes what may well be one of the most serious problems in helping the mentally retarded in sheltered workshops.

> "An important outcome of this study is the discrepancy demonstrated between the capabilities of moderately and severely retarded individuals and what is expected of them in sheltered workshops. While certain manipulations produced an increase in learning rate, even the lowest performing groups and individuals did far better than was expected of them by the workshop personnel.
>
> "Expectancies held by workshop personnel are a result of their training and experience. As a function of their training, these professionals direct the large part of their activity toward the social aspect of the work environment. By admission, they do little in the way of cognitive and skill development, not because they negate the importance of such emphasis, but because they do not have the necessary training to do so. The level of functioning of sheltered workshop clients, then remains essentially unchanged, apart from the improvement gained through the alleviation of maladaptive social behavior" (p. 524).

Bellamy (1975) expanded upon the work of Gold, first by establishing a continuing workshop program with severely retarded individuals taken from state institutions, and then by arranging for replication of the program in different settings and under other management. This program has been remarkably effective in demonstrating that very severely retarded individuals can learn to perform complex tasks required for contract performance and can achieve at or above minimum wage levels. The cost of such programs can run from two to three times the amount required to keep such individuals in a "development" or "activity" center but some of the cost may be offset by additional contract revenues.

Whereas Bellamy has apparently "put it all together" in an operational program, his efforts were based upon some ten years of research on behavior management. Huddle (1967) was working with trainable mentally retarded adults over ten years ago in the assembly of television rectifier units. He was able to demonstrate that trainable mentally retarded subjects "can learn and perform a regular industrial operation of a type used in the United States ..." (p. 208). Huddle was also interested in techniques for increasing production rate through competition and rewards, as were Brown and Pearce (1970) some years later. Karen, Eisner, and Endres (1974) studied the use of behavior modification in training retarded adults in a sheltered workshop. Their findings were consistent with those of Trybus and Lacks (1972) that client production can be increased through behavior modification techniques.

Similar research by Zimmerman (1965), Cowan (1959), and Evans (1966) added to the knowledge base which led to the successful demonstration by

Bellamy. There appears to be no doubt that very severely retarded adults, even those who have been relegated to the back wards of some institutions, can be trained to perform adequately in sheltered environments if time, patience, skills, and money are invested properly.

There appear to be ample data from the research literature to support the claim that severely retarded individuals can be trained to become more productive and that moderately retarded individuals can be trained for competitive employment. Unfortunately, this point of view is not accepted by all workshop operators. As stated by Olshansky, (1976) in his response to the Greenleigh report,

> "Let me repeat the obvious. The large majority of clients coming to a workshop require a permanent setting where they can be employed under sheltered conditions. The long held fantasy of a workshop as a transitional facility has to be replaced by the reality of a workshop as a terminal one. While from time to time a minority of clients will 'graduate' to regular employment, over time the largest number will be unable to 'graduate'" (p. 310).

In conclusion, there is ample reason to believe that large numbers of moderately and severely retarded adults can learn productive vocational skills. There is also reason to believe that the principle approach to such training has been in non-educational facilities which have been less effective than might be desired. Some attempts have been made to enroll mentally retarded adults in postsecondary educational agencies but little data are available relative to effectiveness of such programs.

II. PROCEDURES

The procedures which describe the operations of this project are divided into two major categories. The first of these considers the developmental and management processes of the project and covers most of the operations from initial conception through the four year period of the Developmental Disabilities grant.

The second provides an abbreviated description of the training procedures used to bring the trainees up to a level of employability. An operational manual which specifies the training procedures in considerable detail is available from the University of Washington and through the CEC-ERIC system.[2]

Operational and Management Procedures

This section of the report covers the operational and management procedures with the exception of the procedures used in the training program itself. This section is divided into five subsections as follows: (a) project background, (b) description of subjects, (c) placement procedures, (d) replication procedures, and (e) follow-up procedures.

Project Background

This project had its beginnings early in 1973 with the establishment of a committee to "assess new directions for the management and use of the cafeteria" in the Child Development and Mental Retardation Center (CDMRC). The CDMRC cafeteria, a University of Washington food services operation, was to be closed sometime during the summer of 1974. Since the facility had been constructed and equipped with funds appropriated for the construction of mental retardation facilities, it seemed appropriate, even necessary, to convert it to a use more related to the purposes for which the funds had been appropriated.

The planning committee, under the leadership of Dr. Rose McCartin of the University's College of Education, was established in the spring of 1973. The charge to the committee was to consider how the facility might be used "for serving lunches for staff and patients and for the employment and training in food production of handicapped persons" (memo, April 1973). A preliminary proposal describing the proposed project was developed by Dr. James Moss, Director of Planning and Development, sometime during January of 1974. The first proposal for funding was submitted on May 31, 1974, to the University of Washington for University support. That request was subsequently turned down. A new proposal, dated July 30, 1974, was submitted to the State Division of Vocational Rehabilitation, again without success. Subsequent discussions with personnel of the regional office of the Rehabilitation Services Administration led to the submission of a proposal to that agency dated November 11, 1974. The proposal was subsequently approved for funding to begin April 1, 1975, with the Center Director, Dr. Irvin Emanuel as Principal Investigator.

The planning which took place between the initial establishment of a planning committee in April of 1973 and the awarding of a grant two years later

[2] Vocational Training Programs, Child Development and Mental Retardation Center, University of Washington, WJ-10, Seattle, Washington 98195. ($15.00)

included extensive conversations with the Washington State Restaurant Association, with the unions which relate to the food services industry, with the state departments of vocational education, vocational rehabilitation and developmental disabilities, with the King County Developmental Disabilities Board, and with others concerned with handicapped individuals and the service systems which relate to them. Site visits were also made to existing food service training programs in the King County area.

Although funds for the operation of the program became available in April of 1975, a number of steps were necessary before the first trainee could be enrolled in the program. The cafeteria had been closed during the preceding summer and it was necessary to reestablish the cafeteria as a food service program. This was necessary in order to have a base for the training program. A food services program was designed and staff recruited who would provide the type of service desired and at the same time play a support role in the training of mentally retarded adults. It was also necessary to recruit a training supervisor with appropriate skills and interests in order to initiate the training program.

Originally, the plan had been to place both the kitchen operations and the training program under one supervisor who would manage both. However, at the point of implementation, a decision was made to keep these two operations separate. This turned out to be a key decision in the success of the project.

The first lunches were served in the reestablished cafeteria during the early summer of 1975. The training supervisor was recruited and reported for work in September of that year. Instructional materials and initial training procedures were developed and the first trainee enrolled on December 20, 1975, almost nine months after receipt of the first grant.

Trainees

The purpose of the project was to provide training to individuals considered to be moderately or severely mentally retarded. Specific intelligence quotient limits were never established; however, there was a general consensus that the upper range of "moderate" should be consistent with the definition accepted by the American Associated on Mental Deficiency (1977). This definition would place the upper limits at about 55 IQ with indications of poor adaptive behavior. However, since the emphasis of this project was on mentally retarded persons who were otherwise considered unemployable, this upper limit appeared too restrictive. There are many retarded adults in sheltered workshops with IQs higher than those included within the "moderate" range. Furthermore, there was a need during the initial development of the project to work with trainees who showed reasonable chances for success. Thus, some individuals with IQs above the moderate range were included in the project, particularly during the early years.

There was no attempt to establish a lower functioning limit for admission into the program. It was decided that exclusion from the program because of low intelligence was inappropriate until more data became available. One purpose of the study was to determine what the lower limits might be for efficient and effective training. Thus, individuals were accepted into the program with measured IQs of 30 and below.

The project has never required an assessment of intelligence as a prerequisite to entrance into the program. All IQ scores on trainees were supplied from referring agencies. These scores are recorded and reported to provide general information about the trainees but there is no guarantee as to accuracy or recency.

A decision was made early in the program to refuse admission to any person of high school age. It was believed that all retarded young people should take advantage of the opportunities for a secondary education program provided by the school system. This was consistent with the philosophy of the project that special services should be added to opportunities already available and not substituted for them. However, the extension of secondary school programs for handicapped persons through age 21 raised questions about this policy. Since most normal students leave secondary education programs at about age 18, many to enter into postsecondary educational programs, it seemed appropriate to allow entry into this program for individuals 18 or over, even though they might otherwise continue in a secondary school program. Thus, the lower age limit for this program was set at age 18.

No upper age limit was set for entry into the program. It can be noted, however, that a tendency existed on the part of referring agencies to refer individuals within the 20 to 40 year age range.

A total of 63 trainees was accepted into the University site program from December 1975 through November 1979. Some of the general characteristics of these individuals are described in Tables IV, V, VI and VII.

Table IV

Age and IQ of Trainees
(University Site Only)

Group	Age	IQ
Male		
N	41	41
Mean	27.0	55.1
S.D.	6.1	13.2
Female		
N	22	22
Mean	24.7	52.6
S.D.	4.8	12.5
Total		
N	63	63
Mean	26.2	54.2
S.D.	5.8	12.9

Table V

Experience of Trainees Prior to Enrollment
(University Site Only)

Group	Sheltered Settings	Prevocational Training	Competitive Employment	No Formal Activity
Male				
N(%)	28 (68%)	5 (12%)	3 (7%)	5 (12%)
Mean	4.8 Yrs.	3.4 Yrs.		
S.D.	3.4	2.6		
Female				
N(%)	9 (41%)	7 (32%)	0	6 (27%)
Mean	5.2 Yrs.	2.9 Yrs.		
S.D.	3.3	1.8		
Total				
N(%)	37 (59%)	12 (19%)	3 (5%)	11 (17%)
Mean	4.9 Yrs.	3.1 Yrs.		
S.D.	3.3	2.1		

Table VI

Living Accommodations of Project Trainees
(University Site Only)

Living Accommodations	Number of Trainees
With parents	35
Group homes	11
Boarding homes	6
Half-way houses	6
Foster homes	3
Institutions for retarded	1
With spouse	1
Total	63

Table VII

IQ Distribution of Mentally Retarded Trainees
(University Site Only)

IQ Range	Numbers
90 - 94	1
85 - 89	0
80 - 84	2
75 - 79	0
70 - 74	2
65 - 69	8
60 - 64	10
55 - 59	6
50 - 54	13
45 - 49	7
40 - 44	8
35 - 39	1
30 - 34	5
Total	63

It can be noted in Table IV that there were almost twice as many males as females in the group. No attempt was made on the part of the training staff to control this variable. Presumably, the disproportionate number of males over females represents either a selection bias on the part of the referring agencies or a reflection of the disproportionate number of males in sheltered workshops and developmental centers. There was also a slight difference in age and IQ between males and females but this difference did not prove to be statistically significant.

Table V shows an interesting difference in the backgrounds of the males and females. A greater proportion of females had no formal training or work experiences between high school and enrollment in this program. Furthermore, a significantly larger percentage of males had been in sheltered workshops prior to entering the program.

Table VI shows the living arrangements of trainees in this program. Surprisingly, over half of the trainees lived with their parents.

In general, the trainees of this study were relatively young, in their mid-twenties, and moderately retarded with an average IQ of approximately 54.

Placement Procedures

During the planning phase of this project, contacts were established with the Washington State Restaurant Association and with the unions which represent food service workers. Assurance of cooperation was received but it was still necessary to identify specific job sites for program graduates. The initial step to accomplish this was to send out letters with return postcards describing the training program and asking restaurant operators to respond if they were interested in possible participation. One hundred letters were sent out, representing every third establishment listed in the Seattle Restaurant Owner's guide. Only eight cards were returned but not with job offers. Follow-up phone calls were made to those employers who did not respond to discuss their willingness to hire mentally retarded workers. Although no positions were found through this process, lines of communication were opened to many restaurants, some of which led to jobs later.

The process found be be most effective in eliciting job offers for program graduates was to send form letters to prospective employers explaining the program and inviting them to visit the training facility. Since few employers had experience with mentally retarded workers, these initial contacts and visits were informational rather than placement oriented. A tour of the training facility allowed the prospective employer to see the trainees at work in the kitchen and to see the similarities and differences between the training environment and his or her own establishment. Contact was maintained with the prospective employer thereafter until a job opening occurred.

Problems of "job development" diminished substantially after the first year or two of the project. It was still necessary occasionally to send out letters and to followup newspaper ads, but in the later years the project had become better known in the restaurant community and restaurant operators often called seeking employees.

Follow-up Procedures

It is difficult to determine where training and placement ends and follow-up begins. The placement trainer who accompanied a new graduate to a job for continued on-site training was responsible for continuous follow-up after the

graduate began working independently. Once a trainee achieved independence, follow-up visits were made once or twice a week to monitor performance and to watch for the emergence of problems. The number of contacts with the trainee was reduced eventually to an occasional phone call to the employer.

Effective and continuous follow-up was important for job success. Occasionally, problems arose in the work setting which could have led to dismissal of the program graduate. If these were identified early enough, steps could be taken to correct them. Also, events unrelated to work productivity could cause a graduate to lose a job. For example, a relatively minor change in a bus schedule could result in a graduate's failure to appear for work on time as required. Furthermore, it was almost inevitable that minor but irritating problems occurred which bothered the employer. Encouragement and support by the placement trainer were necessary to reduce the impact of these problems and to help keep the graduate on the job.

Occasionally, graduates lost their jobs for reasons which had nothing to do with their performance, such as the closing of a restaurant or a change in management. Graduates also lost their jobs because of a deterioration in work performance. When a program graduate lost a job because of vocational or social skill deficits, the reasons were analyzed and the person brought back into the training program for appropriate retraining and then placed in a new job.

Replication Procedures

By the end of the first three years of the project, it became clear that the University of Washington staff using university facilities could train mentally retarded individuals for employment in competitive food service jobs. However, this alone was not adequate to convince state and local decision makers that such programs should be started on a larger scale. Not only was the Child Development and Mental Retardation Center at the University of Washington considered a unique environment, but the program was supported by federal grant funds which would not always be available to other settings. In order for the project to be convincing, it was necessary to develop a replication in another setting and under more readily available sources of support.

The original intention for replication was to develop a program in a community college facility. However, at that time (mid 1978) some state rehabilitation personnel were hesitant to see training programs for seriously disabled individuals developed in non-rehabilitation settings. Because of this, and with the cooperation and guidance of state, regional and county personnel from the Divisions of Vocational Rehabilitation and Developmental Disabilities, an arrangement was made with a sheltered workshop/activity center and a local hospital. It was agreed that the university project staff would work with the sheltered workshop/activity center in the training of personnel to operate a training program in the hospital kitchen. The Federal grant to the university would cover the costs of such training plus additonal costs involved in initiating the project. One of the interesting discoveries was that none of the staff of the sheltered workshop, in spite of early indications of interest, chose to transfer to the food service training program. This was particularly surprising since the kitchen program paid considerably more than was normally paid for workshop supervisors. As a result, it was necessary to recruit new individuals who were willing to work in the kitchen setting.

The criteria for admission into the food services training program in the replication site were quite different from those at the university site. Representatives of the Division of Vocational Rehabilitation were concerned about the possibility of "skimming" the most able clients into the program. Because

of this, a commitment was made that only clients who had been in the facility for three or more years and had been "closed" by the vocational rehabilitation counselor as unemployable would be admitted into the program. Since these were the only criteria for acceptance into the program, there was less emphasis on taking the most severely disabled. As a consequence, the trainees at the replication site had higher measured IQs than those accepted into the university site. The ten individuals entered into the replication program had average IQ scores of 61.4. This group was approximately the same age as those in the university program. The average time spent in sheltered employment prior to entry in the training program was four years, eight months.

The university staff continued to work with the project for one full year. During that time, arrangements were made for continuation funding through appropriate state agencies.

Toward the end of the first year, the state agencies which participated in the selection and planning of the project reconvened for an evaluation. This experience led the agency personnel to see the advantage of expanding such training programs but in more traditional vocational-education facilities.

Training Procedures

The University of Washington made use of three sites for vocational training of mentally retarded adults. The first was the cafeteria operated by the Child Development and Mental Retardation Center and located within that facility. The second was a cafeteria in a nearby student union building. The third was the restaurant which employed the mentally retarded worker after graduation.

The cafeteria, still operated by the CDMRC, was a normally functioning public facility requiring the same work, social and self help skills as any other restaurant. Since it was developed for the specific purpose of supporting this training program and was managed by the CDMRC, it allowed for more flexibility in training and tolerated more deviations from normalcy than might have been found in other settings.

The cafeteria at the Student Union, on the other hand, was not under the control of the CDMRC training program and more closely approximated the pressures of the real world. Trainees typically received their initial training in the CDMRC cafeteria and then, when skills developed to a desired level, transferred to the student union building for additional training under less intensive supervision and much higher speed and volume requirements. The trainer/trainee ratio was approximately one to five in both university settings.

The third setting was the restaurant which employed a program graduate. This on-site training was very much a part of the training process and was not to be confused with follow-up activities. On-site training was critically important for several reasons. First, the equipment, space arrangements, task sequencing, social environment, and general demands of the job were usually quite different from those experienced in previous training settings. Second, the provision of on-site training provided valuable feedback to the training program resulting in significant program modifications. Third, the provision of on-site training provided an opportunity for the placement trainer to help supervisors and co-workers to understand the new employee's strengths and weaknesses.

Training was provided to all trainees in three occupational areas: (a) dishwashing, (b) bussing and (c) utility-maintenance. Trainees were assigned to job stations; each trainee completed from ten to fifteen tasks related to each job. The jobs were the same each day and performed in the same sequence.

Measurable criteria were established for each of the skill and behavioral areas required for vocational placement. Progress in relation to these criteria

was expressed in percentages. When trainees reached or exceeded 80% for all critical behaviors in the primary training site, the trainee "graduated" to the secondary site. In some instances, at the discretion of the trainers, a trainee moved directly from the primary site into on-site training in competitive placement.

Trainees received instruction in two broad areas considered important for vocational success. The first of these concerned the specific vocational skills required for the job. The second related to the social and personal skills necessary to maintain appropriate on-the-job behaviors and relationships. Four components were identified as important to vocational performance. The first of these was the ability to execute any given task. The first responsibility of a trainer was to make sure the trainee could do the job which was required. The second component was speed in accomplishing such tasks. Once a trainee reached a criterion in the performance of a task, training for speed and efficiency began. The third component was the ability of the trainee to stay "on task." The final component was the ability to perform the learned tasks independently with little or no instruction from the employer or supervisor. This involved both "within task" and "between task" independence. A variety of techniques were used to develop "self monitoring" to enable a trainee to decide if desired behaviors had been performed and to modify accordingly.

Appropriate behavior in three social and personal skill areas was considered essential for success in competitive employment. These areas were: (a) grooming, (b) time management, and (c) bus riding. Unfortunately, many mentally retarded adults had not been taught to evaluate their own personal appearance and hygiene. Apparently, these are not important factors for success in many sheltered employment situations. Making use of pictures as cues, trainees in this program learned to identify the particular areas of grooming needing attention. Trainees were taught to monitor their own behavior in this respect and to maintain good grooming without the need for intervention.

The ability to manage time was considered important for competitive employment. Employees must arrive at work on time, carry out certain tasks according to a time schedule, and take their lunches and breaks at particular times. Unlike many sheltered environments where the day begins when the client arrives, ends when the client leaves and decisions about time are made by staff, competitive employers expect their workers to manage time by themselves. Many seriously and moderately retarded individuals do not know how to tell time and the cost of instruction for that activity can be extremely high. As a consequence, this training program attempted to teach trainees to "manage" time rather than to "tell" time. Generally speaking, this was done by teaching trainees a "match to sample" technique wherein they were given a "time card" with pictures of clock faces with hands drawn in to represent times for particular activities. Drawings related to each clock face indicated the activity to be initiated or terminated at the time indicated. Thus, the trainee was taught to match the clock face on his time card with the real clock and therefore knew when to carry out a given function.

The ability to make use of public transportation is critically important to the mentally retarded since many never develop the competencies or resources to enable them to drive to and from work. Most individuals in sheltered workshops have transportation arranged for them and do not develop the skills for independent bus travel. Consequently, all trainees in this program were taught to use the public transportation systems. This was accomplished by a process wherein the trainer rode the bus on the route between the trainee's home and the Center in order to identify the particular route. The trainer then

rode the bus with the trainee, providing careful instruction as to the cues to which the trainee must respond in order to get on the right bus, make the appropriate transfers, and depart the bus at the appropriate location to arrive at work.

Aside from the particular skills just mentioned and which were taught to all trainees in the program, some trainees showed up with specific social deficits which required correction. The correction of inappropriate behaviors was accomplished through individual programs which included the identification of a specific behavior, accurate and systematic recording of the occurrence of such behavior, and the use of various reinforcement systems to decrease the numbers of inappropriate behaviors. Generally speaking, the most frequently noted deficiencies were in the areas of "greeting skills" and "responding appropriately to verbal instructions."

In general, this program provided a standard curriculum with clearly established objectives and criteria for all trainees. The amount of time required by an individual trainee to complete the program depended upon the magnitiude of the deficits presented. The training program concentrated exclusively on areas considered critical for successful employment. No time was given to teach skills which might have been useful but which were not essential.

III. RESULTS

This project provided or is currently providing vocational training to 63 individuals at the University of Washington site and an additional ten individuals at the replication site. The disposition of these 73 persons is indicated on Table VIII.

Table VIII

Disposition of Trainees Entering the Vocational Training Program

Disposition	University Site	Replication Site	Total
Training Not Completed			
Still in Training	13	4	17
Withdrew During Training	7	1	8
Training Completed			
Withdrew After Placement	9	0	9
Undergoing Retraining	4	0	4
Employed	30	5	35
Total Enrolled	63	10	73

It can be noted from Table VIII that 48 individuals in the two sites completed the training sequence. Thirty five of these are currently employed for a success rate of 73%. The success rate would drop to 62% if the seven individuals who failed to complete training were included in the analysis.

As was noted in the procedure section of this report, the purpose of the replication program and the criteria for admission to that program differed from those of the University site. For this reason, it is not always possible to combine data from the two sites. It also bears repeating that the IQ data acquired during the course of this study are of unknown reliability. These data are analyzed and appropriate results presented but the reader is cautioned that results relating to IQ scores may be suspect.

The data from this study are organized in accordance with the most frequently asked questions about the project and are presented under the headings: (a) length of training, (b) cost of training and follow-up, (c) employment experiences, and (d) job failures.

Length of Training

The analysis of time required to provide initial training (prior to first job placement) to the participants of this project was based only upon those persons who completed the training program. Since length of training is indeterminate for those still in training or who dropped out before completion, data relating to such individuals could not be used for this analysis. A summary of the data are presented in Table IX.

Table IX

Length of Training Required for Trainees at the University and Replication Sites

Months in Training	University	Replication
0 - 2	6	1
3 - 5	10	2
6 - 8	12	2
9 - 11	5	
12 - 14	5	
15 - 17	2	
18 - 20	2	
21 - 23	1	
24 - 26	1	

The average period of initial training for individuals at the University site was 8.3 months with a range from one to 24 months. The average period of training at the replication site was only 4.4 months with a range from eight weeks through six months. The difference in length of training at the two sites reflects the different purposes and different admission criteria of the two programs.

Twenty-eight of the individuals who completed training lost their initial jobs and required retraining. The average retraining time at the University site was 1.5 months. Eleven who lost their jobs required no retraining at all but could be placed directly on another job. The single person from the replication site who lost a job required less than one month for retraining.

Length of initial training was negatively correlated with intelligence test scores ($r = -.34$). On the average, individuals with lower IQ scores required more time for training.

Individuals with IQs above 5[illegible] required an average of 6.7 months for initial training as compared with an average of 11.8 months for those with IQs of 50 or below. The difference is statistically significant at the .05 level. Seventy-two percent of all trainees requiring a year or more of training had recorded IQs of 50 or below. It does not necessarily mean, however, that all persons with low IQs are a poor risk for training or that all require extensive training time. Although no individual with an IQ of 50 or less was trained in less than five months, over 40% were trained in eight months or less.

Separate correlations were computed for individuals with IQs above and below 50. When this was done, the correlations were reduced to .05 and -.08 respectively. Although level of intelligence is definitely a factor in the amount of time it takes a person to reach criteria for placement, it appears to account for a relatively small amount of the variance.

Cost of Training and Follow-up

The cost of successful training at the University site, including the cost of retraining where required, amounted to an average of $5,120 per person trained. The average cost of on-the-job training and follow-up was $1,198 per person. This gave an overall average of $6,318 per person. Training costs were directly related to the amount of time required for training. The average cost per month per trainee varied from approximately $600 per month to $650 per month over the period of the project with the higher per month rate reflecting higher costs during the later years of the project.

Costs for follow-up activities varied significantly from trainee to trainee and reduced dramatically over time. The cost reductions over time are illustrated on Table X.

Table X

Average Cost of Follow-up by Time Periods

Time Period	Average Cost
0 - 6 Months	$ 260 per Trainee
7 - 12 Months	120 per Trainee
13 - 18 Months	35 per Trainee
19 - Plus	10 per Trainee

It is worth noting that cost averages do not present the most accurate picture of follow-up expenses. There was considerable variability from person to person. For example, half of the individuals employed 19 months or more incurred no follow-up expenses while one person accounted for almost all of the expenses for that group.

The above figures are based on those trainees who completed the program and became employed. An average of $7,425 for a total of $118,792 was spent

on the 16 persons who either failed to complete training or left their jobs after becoming employed. If the cost of these failures were included in the per/trainee cost of those who succeeded, the costs would jump to almost $10,000 per successful person.

This, however, could lead to an inappropriate conclusion relative to the cost of training because of the experimental nature of this program. The project purposely included individuals who were at high risk for failure in an effort to explore the limits of trainability, and continued working with these trainees far longer than might otherwise be the case in some other setting. Three individuals, for example, stayed in the program from 20 to 24 months at a combined cost of over $40,000 before being dropped and returned to sheltered settings.

All of the above figures relate to costs at the University site. Accurate comparable figures for the replication site are not readily available because of different record keeping systems but it is estimated that training costs are in the magnitude of $420 per month per trainee. On-the-job training and follow-up costs at the replication site are considerably higher, however, because of economies of scale factors inherent in a new program. The per person cost for follow-up will decrease as the number of graduates increases and workers stay on the job for longer periods.

Employment Experiences

Thirty nine individuals in this project are either employed or being retrained for employment. The employment experiences of these individuals are presented in this section under five headings: (a) hours worked, (b) income, (c) length of employment, (d) reasons for job losses, and (e) examples of employment situations.

Hours Worked

The average number of hours worked by all program graduates, including those from the replication site, is currently 33.2 hours per week. Twenty of the 39 (51%) work a full 40 hour week. Eight (21%) work between 30 and 40 hours per week and 11 work less than 30 hours per week. There are a number of reasons for the reduced hours. In one case, the worker lacks the stamina to maintain the pace of a 40 hour week. In other cases, the jobs do not require a full eight hours per day. However, the greatest problem rests with potential loss of SSI (welfare) support. Since there is a limit on the amount a worker can earn and still retain SSI eligibility, many workers must either work reduced hours or lose the medical and housing benefits available under SSI. The disincentives which interfere with employment for handicapped workers are very real.

Income

The majority of workers earn wages on a per/hour basis although three are receiving monthly salaries. The average hourly wage of individuals trained at the University site is $3.36 per hour. The range is from $2.90 to $6.36 per hour. The average of the three individuals on monthly salaries is $671 per month. This figure will increase in January, 1980 because of increases in the minimum wage.

The individuals trained at the replication site earn slightly less per hour ($3.08). This is a reflection of the period of time employed on the job. The higher earning individuals from the university program have been on the job for

over three years while the replication site has only been in operation for about a year.

Data are kept on the total accumulated salary for each person and on length of time on the job but these figures cannot be averaged in a meaningful way. New graduates, obviously, have neither been on the job for extended periods nor accumulated much income. The total accumulated income, however, for all workers trained through both sites is $284,726 with $276,440 attributed to University site graduates.

Length of Employment

Over 40% of the graduates of the University site have held their present jobs for over 18 months. Five of the graduates have been employed on the same job for over three years. However, it is worth noting that 20 of the 39 individuals who graduated from the two programs (51%) lost their first jobs with 60% of these initial jobs lasting less than one month. Eighty percent of all job failures occurred within the first two months of placement.

There is a high rate of employment stability once a worker remains on a job for at least two months. In only four cases did failure occur after the initial two month period.

Intelligence levels were not related to success or failure on initial jobs or to length of employment. The mean IQ for those who were successful on initial jobs (53.5) was slightly lower than those who failed their first jobs (56.5).

Examples of Work

The following are examples of the work activities of a sample of graduates from this program. These examples were selected to illustrate some of the variability in employment.

1. Porter in large hospital

9:00 Arrive and punch in
9:05 Wash pots and pans
10:20 Drain, clean sink
10:30 Collect baking sheets and wash
11:00 Lunch
11:30 Clean steam kettles, collect laundry
12:30 Wash pots
1:30 Work in dishroom, washing patient dishes
2:30 Break
3:00 Mop 'walk-in' floors
3:15 Wash pots
4:00 Clean grill, empty grease pans, empty kitchen garbage, wash steam kettles
5:30 Punch out

2. Dishwashing in commercial restaurant

9:00 Fill pot sinks, wash pots
10:00 Fill dishmachine, wash dishes
10:30 Take out garbage and boxes
11:00 Lunch
11:30 Wash dishes, sort out contents, rack glasses, cups and plates, sort silver, stack and put away clean dishes

3:45 Break
4:10 Dump garbage, boxes
4:30 Wash pots
5:10 Put away all dishes and pots
5:30 Finish; sign out

3. Potwasher in small hospital

10:30 Fill sinks, wash pots
11:30 Deliver carts of patient meals to floors
12:15 Wash pots
1:00 Lunch
1:30 Wash pots
2:00 Prepare vegetables, peel potatoes, wash lettuce and carrots
3:15 Wash pots
4:30 Serve vegetables and soup on patient trays
5:30 Wash pots
6:00 Break
6:15 Wash pots
6:50 Clean sinks
7:00 Finish

4. Busser in public cafeteria

9:00 Set up bussing cart
9:05 Begin bussing tables
10:30 Break
10:45 Continue bussing
12:00 Collect salt and pepper shakers, sugar jars and refill
1:00 Finish, punch out

5. Dishwasher in nursing home

9:00 Organize dish room
9:15 Bring carts of clean dishes to dumbwaiter and send upstairs
9:20 Unload clean dishes from dishmachine and put away
10:30 Wash pots and pans
11:20 Set up soup cups on steam table
12:00 Pull trays of dirty dishes off cart, remove cups and glasses and rack, pass on to next loader
1:30 Return clean dishes to dining room
2:30 Break
2:45 Clean dishroom, wash mats, sweep and mop floor, clean and refill dishmachine, wipe counters
4:15 Break
4:30 Wash pots and pans
5:00 Wash garbage cans with power sprayer
5:30 Finish

Job Failures

There are three broad categories within which to describe job failures. There are those individuals who left their jobs voluntarily, those who lost their jobs for reasons unrelated to their performance, and those who were fired for performance deficiencies.

Five individuals voluntarily left their jobs for a variety of reasons. Two quit to become married and to devote full time to homemaking. Both of these left the program and were not interested in pursuing other employment. One individual quit because he did not like restaurant work and refused to accept other placements. Two individuals quit their jobs because they did not like the hours. Employment was found for both of these in other settings.

Three individuals lost their jobs for reasons apparently unrelated to job performance although the fact that this happened twice to one individual suggests that there may have been problems which were not reported by the employer. One worker was laid off because of staff reductions at the restaurant but was referred for employment at another restaurant managed by the same employer. Another was laid off because the manager wanted to hire a relative or friend. The person who lost two jobs was laid off first because a change in management brought in a supervisor who refused to work with a retarded person. The second loss was due to a staff reduction at the restaurant. This person is currently employed in another setting.

It is worth noting that a civil action could have been filed with reference to the person who was laid off for no reason other than that the supervisor did not want to work with a retarded person. This was a clear case of discrimination against a person because of a handicapping condition. However, the case would have been difficult to make and the action might have caused other potential employers to hesitate to hire other program graduates.

The majority of job failures were related to performance. In 45% of the cases, speed of performance was a factor if not the cause of the failure. Attitudes of the workers and the inability to consistently complete a task correctly were the next most frequently mentioned reasons for job failures. Quality of work was frequently a factor but apparently not as important as the attitudinal and speed problems mentioned above. The inability to follow instructions was another often cited reason for failure.

There were occasional references to personal hygiene and poor social relationships with co-workers as causes for job failures but these were infrequent. One worker lost his job because of inappropriate verbal behavior.

If one were to attempt to identify the most important qualities which relate to job successes or failures, these would have to be (a) speed of performance, (b) general attitudes relating to the employer, co-workers and the work situation, and (c) the ability to follow instructions.

IV. CONCLUSIONS AND RECOMMENDATIONS

The findings of this study have been reported in the preceding chapter without reference to many statistical procedures. The project outcomes are relatively self-evident but there are many questions which could be asked by serious researchers. The trainees were not randomly drawn from an identifiable population; selection was determined in part by the referring system and in part by the research interests of the project. Intelligence test data were of unknown reliability. Contrast groups were not used.

Nevertheless, much of the data obtained as part of this study are quite reliable. Furthermore, these data relate to variables which are considered highly important including the number of years spent in sheltered settings, the documented "unemployability" of the trainees prior to training, the income earned by program graduates and the number of months and years of employment following training.

This chapter presents the conclusions reached by the project staff after four years of training mentally retarded adults for jobs in the food service industry. The conclusions are based as much, if not more, on the observations and experiences of the staff in the conduct of the project as on the analysis of summative data. However, until these conclusions have been examined through additional research, it might be appropriate to consider some of them as hypotheses for further inquiry. The material in this chapter is presented under six headings: (a) Vocational Training for Mentally Retarded Adults, (b) Cost Factors in Vocational Training, (c) Disincentives, (d) Issues for Further Consideration, (e) Recommendations, and (f) Conclusions.

Vocational Training for Mentally Retarded Adults

The results indicate that 35 of 39 individuals trained and placed into jobs during the course of this project are currently employed. There is little question in the minds of the project staff that none of these people would have been employed had it not been for the vocational training provided by the project. Based upon this finding, it is the conclusion of the project staff that vocational training can be effective both in moving mentally retarded adults from sheltered settings into competitive employment and in preventing high school "graduates" from entering sheltered settings.

There are a number of factors relating to the success of the project which deserve comment.

Replicability

It is possible for the training program to be "packaged" and transferred to another site. The highly structured curriculum and the availability of training materials and manuals made it possible for a different group of people to operate a successful training program in an entirely different setting. Furthermore, after some initially higher start-up costs, the replication project was able to operate within the normal funding systems of the State of Washington.

The Structured Curriculum

This project made use of a highly systematic, structured curriculum which included specific instructional procedures. Each training objective was specified and criteria established to determine when the objective was achieved.

Progress toward each objective was carefully measured each day and training procedures modified if necessary. This curriculum is available at cost from the University of Washington.

A Non-Developmental Approach

A developmental approach to instruction which is appropriate for children in the elementary and secondary grades appears questionable when instructing mentally retarded adults. Many training programs for moderately and severely mentally retarded persons incorporate training in living and social skills, prevocational skills, and vocational skills in that order. It is not uncommon to find "prevocational" programs operating in situations where no vocational training exists or is contemplated. Experience with this project has suggested that mentally retarded adults respond to a direct approach toward terminal employment objectives and that "prevocational" training for post high school adults may be unnecessary, costly, and non-productive.

Learning vs. Performance Deficits

Mentally retarded adults clearly have learning problems. It can take as much as a year for a seriously retarded individual to learn a job that a non-retarded person can learn in a week. However, once the job has been learned, the mentally retarded person can perform at essentially the same level as a normal person. This finding led the project staff to conclude that mental retardation is best characterized by learning deficits rather than by performance deficits. Where performance problems appear, as they often do, it would appear that these may be the result of faulty learning in previous situations. Clearly, there are some mentally retarded persons whose learning processes are so deficient that no amount of instruction could eliminate performance problems. However, the experience with the trainees in this project suggests that most performance problems can be reduced or eliminated through training.

This conclusion is considered important in that it suggests that unacceptable behavior on the part of mentally retarded students and adults should truly be unacceptable. There is reason to believe that behavioral standards for mentally retarded adults, even those in the moderate and severe ranges, can and should be the same as for non-retarded adults.

On-the-Job Training

On-site training in the employer's establishment was considered an essential part of the training sequence for mentally retarded workers. The training program was not considered completed until the trainee was working independently on the job site. Unfortunately, traditional concepts of rehabilitation consider "placement" as the terminal objective and funding is reduced or eliminated at that point. In the experience of this project, on-site training and continuous follow-up are absolutely essential components of this process for severely and moderately retarded individuals. Without these components, money and time invested in training will often be wasted.

Employer Understanding

Most employers were much more ready to restructure work and modify their demands than had been anticipated. However, many employers need help in understanding the nature of mental retardation and in coping with program

graduates. Working with severely mentally retarded workers is a new experience for most employers and there are natural anxieties and concerns. Employers who hire program graduates are willing to extend themselves but they often need guidance, encouragement, and reinforcement. Long term follow-up gives the employer a sense of security in the knowledge that someone will be responsive if help is needed. The cost of long term follow-up is relatively small when compared with the cost of retraining on a new job site. Employers were more understanding than had been anticipated and this was an important factor in the success of the program, but understanding the needs of the employer was equally important.

Parents and Guardians

One of the most critical factors leading to successful employment for mentally retarded adults was the attitude of parents and guardians. Many parents and guardians still believe that a moderately or severely retarded adult must be sheltered from the "real world." Furthermore, many of these attitudes are reinforced by professionals who have not become aware that training procedures have been developed which could lead to competitive employment. Many parents see their young adult sons or daughters as incompetent and expect them to fail in the employment situation. Instead of offering encouragement and support when difficulties are encountered, these are accepted as confirmation of incompetency and reasons for withdrawing from the program. Group home operators and others responsible for the residential care for these workers are not always enthusiastic about employment opportunities for their residents. This can be particularly true if the hours of work are not consistent with the normal schedule of the residential situation.

In the past, the problems of training and employers overshadowed all others in attempts to enable severely and moderately retarded adults to become employed. As these problems are resolved, the problems caused by attitudes of parents and caretakers will stand out in clearer focus.

Cost Factors

The cost of training in this project was approximately twice the amount the State of Washington pays per day to keep a person in a developmental center. Because of this, some critics have judged the project to be impractical and unlikely for replication or adoption. However, the cost of training appears high only when comparisons are made on a per/day basis, not on cost over time. Over a two year period, the State of Washington will pay approximately $5,000 to keep a mentally retarded adult in a developmental center and continue paying that into the forseeable future. It costs a little more than that over the same two year period to provide the training necessary to remove a person from the sheltered setting and into self-supporting competitive employment. The State of Washington is saving over $85,000 this year alone in fees-for-services not required because 35 persons trained through this project are working in competitive employment rather than sheltered settings. This amount increases as savings compound year after year.

Furthermore, a comparison of training costs with the cost of long term day care may not be the most appropriate comparison to make. it might be more appropriate to compare the cost of this training program with the cost of other training programs such as secondary special education programs for mentally retarded youth or postsecondary vocational training programs for non-handicapped adults. Such comparisons would bring a better perspective to the cost situation.

Disincentives

There are disincentives built into the welfare system which make it difficult to encourage the development of vocational education programs for mentally retarded adults. An individual earning a minimum wage will earn from $600 to $700 per month or $7,200 to $8,400 per year. A mentally retarded person living in a group home can draw benefits of at least that much, if not more, from Social Security Disability Insurance (SSDI), Supplemental Security Income (SSI), and Title XX programs.

Although many non-disabled people, particularly those without dependents, seem to survive with no more than the minimum wage, a mentally retarded person usually requires some form of supervision in his or her living arrangement. Unless the person is eligible to draw SSI or SSDI benefits, the cost of such supervision must be borne by the worker. The cost of living in a group home for the retarded in the State of Washington is at least $500 per month and usually more.

It can be noted that over half of the workers trained in this project live at home with their parents. In such situations, where the cost of a residential program is not included in the benefits and where excessive medical costs are not a problem, the worker can earn more through employment than is possible under welfare.

One solution to this problem, currently under examination by the State of Washington, is to reduce the cost of residential care by reducing the level of supervision provided. Various "independent living" arrangements are being considered which might bring the cost down to a level that a worker earning minimum scale could afford to pay.

There are other disincentives in the system which work against the development of training programs in postsecondary educational institutions. For many years there has been a consensus that training for the mentally retarded is most appropriately the concern of rehabilitation specialists and that such training should take place in segregated rehabilitation facilities. Furthermore, professional personnel in community colleges and vocational/technical institutions are not expected to be specialists in special education. University special education programs do not provide training for persons seeking careers in postsecondary vocational training settings. As indicated in the introduction of this report, there appears to be no body of knowledge developed around the concept of vocational education which can serve as a basis for new program development. For all practical purposes, vocational education for the mentally retarded leading to employment in the competitive sector is relatively new to both the fields of special education and vocational education. Lack of knowledge, uncertainty, and a genuine hesitancy to step into unknown territory are the greatest of all disincentives.

Issues for Further Consideration

A number of issues surfaced during the conduct of this project which deserve further consideration. Additional research will be necessary to address these issues.

1. It is not known to what extent the quality of life for mentally retarded individuals has been affected by becoming employed. It would be important to study the non-work lives of retarded adults before they become employed and after employment.
2. The high cost of training in this project results from the employment of fully qualified specialists with skills in behavior analysis and management as

trainers. Alternate staffing patterns could be explored to determine if costs could be reduced.

3. An assumption has been made throughout this study that a high employee turnover rate is a major factor in the willingness of employers to hire severely and moderately retarded workers. Although this appears to be an important factor, it may not be as critical as once thought. Additional research into the requirements of different industries and the needs filled by hiring retarded workers would be helpful.
4. A substantial number of program graduates experienced failure in their first jobs, and then settled down into their second positions. It would be important to determine the causes for this and to develop procedures to minimize initial failures.
5. Now that it has been demonstrated that moderately and severely retarded individuals can be trained for employment in the food services industry, it becomes important to determine other possible vocational opportunities.
6. A number of learner characteristics have been identified which either inhibit or facilitate learning of skills necessary for employment. It would be important to determine if learner characteristics which would facilitate vocational training after high school graduation could be shaped during secondary school attendance.

Recommendations

A great deal has been learned by the investigators in this project which forms the basis for the following recommendations. These recommendations derive as much from the involvement in the project as from the results. As indicated earlier, although the investigators have confidence in the outcomes of this project and the recommendations which follow, others may prefer to consider these as hypotheses until additional research can confirm the results.

The recommendations are grouped into two categories: (1) those addressed to parents and advocates concerned with handicapped persons and (2) those addressed to educators in various settings. Finally, some additional observations are made with reference to Federal systems as they interact with postsecondary education for handicapped persons.

Parents and Advocates

1. Parents and others concerned with the welfare of handicapped persons should view postsecondary vocational education as a natural extension of the education system and take appropriate steps to assure that programs are available as handicapped youngsters leave secondary schools.
2. Programs for handicapped persons at postsecondary educational institutions could be improved through parent and advocate participation on citizen advisory committees associated with such institutions. Efforts should be made to identify and/or organize such advisory committees and become involved in the development of appropriate programs.
3. Postsecondary educational systems generally receive funding through state appropriation processes. Often, where programs have not been established for handicapped persons, it is because requests have not been made to the legislature for funding of such programs. This is often an expression of priorities held by the postsecondary institutions. Parents and advocates could help by working with their legislators to assure that funding is available to initiate and operate postsecondary programs for handicapped adults.

Secondary Schools

Postsecondary vocational programs are, by their very nature, more expensive than secondary educational programs. The student to staff ratio must be smaller because of the intensity of the training programs. For this reason, it seems important to differentiate "prevocational" skills which can be taught in the less expensive secondary schools from the specific job skills which are more appropriately taught in postsecondary settings. This project has identified a number of specific skills which could be taught in the secondary school which could dramatically reduce the cost of subsequent vocational training. The following are skills which would appear appropriate for secondary school instruction:

1. Public transportation. The ability to take advantage of public transportation is essential to acquiring and holding a job for moderately and severely retarded adults. Every trainee in the project reported herein, even those with the lowest functioning levels, was taught to ride buses to and from the training site and to and from work without supervision. Even though school buses are generally available for secondary school pupils, instruction should be provided in the use of public transportation.
2. Speed of movement. Slow movement is a serious deterrent to employment for mentally retarded adults and yet, as has been demonstrated in this project, increased speed of movement can be achieved through training. It would be helpful if secondary schools could attend to this problem rather than accept it as a characteristic of mental retardation. Simple positive reinforcement for increased speed of movement, tasks completed on time, a reduction of within task decision time, etc., could make a significant difference in performance.
3. Social behavior. One of the most frequent deficits noted in this study has been the lack of skills required for appropriate social behavior. When a retarded person moves from a secondary school or a sheltered workshop into a vocational training or work setting, he or she is often moving from a socially permissive situation into one which requires social restraint. This appears to be a difficult transition for a mentally retarded person. Recognizing the difference between a social and a work situation and behaving accordingly can be very important for vocational success for a retarded worker. Appropriate social greeting is a particular example of a skill which the schools could address. Shaking hands is an appropriate form of greeting when introductions are made but it is not necessarily appropriate under many other circumstances.
4. Responsiveness to instructions. Mentally retarded students need to learn appropriate attending behaviors while receiving instructions. They need to learn the appropriate behavioral responses to make after they receive instructions to assure the supervisor that they understand. These are learned behaviors which could be taught in the secondary schools.
5. Time management. Although not all mentally retarded students can learn to tell time, most can learn time management. They can also learn the importance of doing things "by the clock." They can learn that starting a task on time is important and that continuing the tasks until the clock tells them to stop is also important. A "match to sample" process using clock faces can help in this regard. Again, these are skills which can be taught in the secondary schools.
6. Non-productive behaviors. There are a variety of non-productive behaviors which the schools might attend to which are important for postsecondary training and employment. These include tongue extrusion, extraneous

motions, aggressive and hostile behaviors, failure to make eye-contact, and over-friendliness with strangers. Although some of these are difficult to correct in any situation, systematic attention by the schools could be helpful.

7. Specific skill training. Public school personnel should recognize that even the most retarded student has the potential for employment. Educational programs should identify specific skills, such as those listed above, which employers and postsecondary trainers require and direct training programs toward the development of such skills. The generalized concepts of "living and social skill training" and "prevocational" training should give way to very specific objectives which are essential for employment. Independent living skills are important but should not be the exclusive focus of secondary education programs.

Postsecondary Institutions

It can be anticipated that postsecondary vocational educational institutions will play an important role in preparing handicapped persons for employment during the 1980s. Handicapped children, now progressing through the schools under expensive 94-142 programs, will be graduating and moving into adulthood. Parents of these children will not be satisfied with placement into sheltered workshops. The taxpayers who paid bills for 18 to 21 years of education should not tolerate these expenses if they lead to little more than a lifetime of welfare. The postsecondary vocational education systems offer the best opportunity for moving handicapped children into the world of work. The following recommendations are designed to assist the postsecondary facilities in meeting this challenge.

1. Role differentiation. There should be a clear distinction between the roles of secondary schools, rehabilitation facilities, and postsecondary institutions with reference to moderately and severely retarded individuals. The secondary schools could concentrate on specific pre-vocational skills. Postsecondary institutions could concentrate on specific job skills required for employment. Both could include instruction in social skills required for independent and semi-independent living. Rehabilitation facilities for the mentally retarded could provide both training and employment for those individuals with very severe learning and social problems for whom specific skill training might not be immediately appropriate. At the present time, postsecondary institutions offer a wide variety of programs which appear to cut across the responsibilities of the other agencies (see Appendix A for examples of community college objectives for the expenditure of Federal vocational funds set aside for the handicapped).
2. Selective admissions. Not all mentally retarded youth will have an opportunity to attend a postsecondary educational program, just as not all non-handicapped youth progress to postsecondary training. The postsecondary facilities should be selective and choose for admission individuals with reasonable chances to succeed in vocational training programs. There is a tendency in some states to provide "prevocational" training to groups of retarded individuals rather than to select individuals for specific job training opportunities.
3. Individualized vocational training plans. It is expected that handicapped individuals will benefit from individualized planning at the postsecondary level. Mentally retarded students enrolled in postsecondary educational settings should have specific vocational goals with programs designed to meet those goals.

4. On-campus programs. The concept of "least restrictive environment" applies to postsecondary education as much or more than to elementary and secondary schools. Community colleges and vocational/technical institute programs for handicapped students should operate on the campuses of the institutions offering the programs. Furthermore, the students should be fully enrolled, tuition paying students with full opportunities to participate in extra-curricular activities. The current practices in some states of sending instructors to segregated settings should be discouraged.
5. Funding. The development and operation of specific skill training programs for mentally retarded adults can be expensive. It would be advisable for postsecondary institutions to begin now to include required funding in their budget requests. This could help head off serious funding problems in the years to come as parents and advocates become more familiar with the opportunities available for postsecondary training and begin to demand services. In some states, funding might be available from vocational rehabilitation and developmental disabilities agencies to help with start-up costs but these funds should not be relied upon for the operation of ongoing postsecondary vocational educational programs.
6. Pilot programs. States with limited expertise in providing adult education for moderately and severely retarded individuals might be wise to develop a limited number of pilot programs as soon as possible. This would provide a valuable bank of experience to draw upon in developing additional programs as well as provide a better basis for attracting appropriations from state legislators.
7. Special education assistance. Many postsecondary educational facilities will not have special education personnel on their faculties. Training programs in special education have not often prepared personnel to work with adults, resulting in a severe shortage in this area. However, special education faculty in university teacher training programs in secondary schools can provide valuable assistance to postsecondary institutions desiring to initiate programs for handicapped adults. Postsecondary educational institutions might consider the establishment of relationships with such personnel relative to the development of postsecondary vocational training programs for handicapped youth.

Observations relating to Federal Systems

The Department of Education and the Department of Labor both have an interest in improving employment opportunities for handicapped adults. The role of the Department of Labor with reference to postsecondary educational opportunities for handicapped youth is not yet clear. It remains to be seen whether or not this agency will become involved in formal educational programs. However, the Bureau of Education for the Handicapped and the Rehabilitation Services Administration both have direct responsibilities in this area. Furthermore, the Congress plays an extremely important role in the development of Federal legislation affecting vocational education opportunities for handicapped adults. The following are observations about the interaction of the Federal systems and the development of vocational training opportunities for handicapped adults.

1. Rehabilitation and special education. As indicated earlier, both rehabilitation and special education are important to handicapped adults. The classical distinction between these based on age of employability is no longer useful. The Rehabilitation Services Administration now has

authority to develop programs across the full age range, including preschool while the Bureau of Education for the Handicapped has clear but somewhat limited authority for postsecondary education. It will be necessary at some point to better define the functions and responsibilities of these two agencies.

2. Research. There is a very limited body of knowledge with reference to vocational education for handicapped adults in postsecondary educational institutions. There is a serious need for research in this area. If the 1980s are to see dramatic advances it will be necessary for one or more of the various Federal agencies to designate adult education as a priority area for research and development.
3. Technical assistance programs. Since the number of professional educators experienced in the provision of vocational education to handicapped adults is limited, the expertise of these individuals might be used more efficiently through the mechanism of technical assistance. This could be accomplished through the development of new technical assistance programs or the expansion or redirection of existing programs.
4. Professional personnel training. Both the Bureau of Education for the Handicapped and the Rehabilitation Services Administration provide funds for the support of professional training programs. However, neither of these focus funds toward the training of professional personnel to work in postsecondary educational institutions. In fact, it is not clear that either agency has the legislative authority to do so. Nevertheless, there is a desperate need for personnel trained to work with handicapped adults in postsecondary educational settings. There is a particularly immediate need to provide summer workshops and other short term in-service training programs for personnel currently engaged in providing services to handicapped adults in postsecondary settings.
5. A national conference. The Bureau of Education for the Handicapped, the Bureau of Adult and Vocational Education, and the Rehabilitation Services Administration might consider jointly sponsoring a national conference on postsecondary vocational education for handicapped adults. This would bring together the most current knowledge and allow for the development of a set of guidelines and/or standards which might be helpful in the development of this new area of services to handicapped adults. Such a conference might also be helpful in the development of national goals relative to training and employment of handicapped adults.
6. Federal legislation. The possible emergence of postsecondary education for handicapped adults as a national priority requires that Congress examine carefully the various individual Acts which relate to this area. Possibilities for adult education exist in various Federal Acts but since this has not been a priority area little attention has been paid to these various bits and pieces. It might be helpful if the appropriate committees of Congress would examine the various laws impacting upon postsecondary education in order to facilitate the development of improved programs.
7. Disincentives. The problem of disincentives to employment embodied within the welfare system is very serious indeed. Unless Congress can find a way to qualify handicapped persons for partial welfare services while fully employed, very little will come from even the best of postsecondary vocational educational programs. Legislation is needed which would allow the welfare system to pay the excess costs of living which some handicapped adults encounter. This could be done by calculating the percent of income normally required for housing, medical care, etc. at various income levels and then providing direct grants to handicapped persons when costs exceed the normal range.

Conclusions

The results of this project suggest that most mentally retarded persons could be employed in competitive situations if they were given appropriate vocational training.

It should become possible for mentally retarded youngsters to acquire basic skills in the secondary schools, and then transfer to vocational training programs in postsecondary educational settings. Experiences in these settings should lead directly into competitive employment.

During the past two decades, there has been a clear recognition that residential institutions for mentally retarded persons are detrimental to development and to normal adult relationships and interactions. It is hoped that this study will further the recognition that it is not the presence of beds which make these institutions so detrimental but the lack of opportunity to learn from role models, from effective instructional programs, and from experiences gained through interaction with the community. Day programs which segregate retarded individuals from the community, which fail to provide optimal learning opportunities, and which perpetuate the classic myths of mental retardation are institutions in the fullest sense and should be considered as such.

The hope for mentally retarded adults is through effective education and training. It is the premise of this report that this training can and should be provided in the same settings; on the same campuses which provide training to non-retarded persons. It will only be through participation in the normal institutions of society that mentally retarded persons can truly be free from the special institutions which have been so costly to society and so detrimental to those they were designed to serve.

REFERENCES

Appleby, J. A. Training programs and placement services: Vocational training and placement of the severely handicapped. Salt Lake City: Olympus Publishing Co., 1978.

Bellamy, T., Peterson, L. & Close, D. Habilitation of the severely and profoundly retarded: Illustrations of competence. Education and Training of the Mentally Retarded. 1975, 10, 174-186.

Brolin, D. E. Vocational preparation for retarded citizens. Columbus OH: Charles E. Merrill, 1976.

Cowan, L., & Goldman, M. The selection of the mentally deficient for vocational training, and the effect of this training on vocational success. Journal of Consulting Psychology, 1959, 23, 78-84.

Department of Labor. Sheltered Workshop Study (Vol. 1). Prepared by C.W. Whitehead. Washington DC: U.S. Dept. of Labor, 1977.

Evans, G. W., & Spradlin, J. E. Incentives and instructions as controlling variables of productivity. American Journal of Mental Deficiency, 1966, 71, 129-132.

Gold, M. W. Stimulus factors in skill training of the retarded on complex assembly task: Acquisition, transfer, and retention. American Journal of Mental Deficiency, 1972, 76, 517-526.

Greenleigh Associates. The role of the sheltered workshops in the rehabilitation of the severely retarded (Vol. 1, Executive summary). New York: Greenleigh Associates, Inc., 1975.

Grossman, H. J. (Ed.) Manual on terminology and classification in mental retardation. Washington DC: American Association of Mental Deficiency, 1977.

Huddle, D. D. Work performance of trainable adults as influenced by competition, cooperation, and monetary reward. American Journal of Mental Deficiency, 1967, 72, 198-211.

Karen, R. L., Eisner, M., & Endres, R. W. Behavior modification in a sheltered workshop for severely retarded students, American Journal of Mental Deficiency, 1974, 79, 338-347.

Levitan, S. A. & Taggert, R. Jobs for the disabled. Baltimore & London: Johns Hopkins University Press, 1977.

Olshansky, S. The Greenleigh Associates' study of sheltered workshops: A response. Rehabilitation Literature, 1976, 37, 309-310.

Sontag, E. (Ed.). Educational programming for the severely and profoundly handicapped. Reston VA: The Council for Exceptional Children, 1977.

TenBroek, J., & Matson, F. W. Hope deferred. Berkeley: University of California Press, 1959.

Trybus, R. J. & Lacks, P. Modification of vocational behavior in a community agency for mentally retarded adults. Rehabilitation Literature, 1972, 33, 258-266.

Zimmerman, J., Stuckley, T., Garlich, B., & Miller, M. Effects of token reinforcement on productivity in multiply handicapped clients in a sheltered workshop. Rehabilitation Literature, 1969, 30, 34-41.

APPENDIX A

Community College Objectives for Expenditures of Federal Vocational Education Funds Earmarked for Handicapped Students, 1978-1979

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Peninsula College	Federal Share
To provide five hours per day (25 hours per week) for four quarters in developmental work skills and basic communicative and computative skills to help prepare 15 to 20 mentally handicapped referred by Division of Vocational Rehabilitation for work in sheltered workshops.	$4,000
To provide for special continuing education for classes for 10 to 15 handicapped individuals for 3 quarters, a total of four classes.	1,000
To purchase instructional aids to assist the handicapped in their instructional programs.	1,000
To develop individual vocational goal programs for ten handicapped students enrolled in Education 09 at the Diversified Industries Adult Developmental Center. Performance objectives will be defined.	1,000
To improve inservice development of instructors in handicapped programs by assisting with the cost of attending special workshops and seminars.	387
Grays Harbor College	
To provide a program of basic education to developmentally disabled adults enrolled in a local sheltered workshop and to provide guidance and counseling for student participants (approximately 30 students).	4,000
To improve the physical facilities of the heavy equipment maintenance training center to accommodate handicapped students, a bathroom will be remodeled to meet city and state requirements for the handicapped.	1,939
To improve instruction of physically handicapped vocational students a one handed typewriter will be purchased.	405
To extend the guidance and counseling of handicapped students enrolled in the local sheltered workshop, a counselor will be provided for three months. Over 40 students will be counseled.	1,863

Olympic College	Federal Share
To employ a person who will be responsible for identifying handicapped students, and coordinating services to be provided for students having handicapping conditions.	$4,000
To provide services for students having handicapping conditions, such as tutoring, purchase of supplies and equipment, equipment rental, etc.	7,190
To employ a person who will do counseling and provide other support services for handicapped students.	4,718
Skagit Valley College	
To provide support services, travel or released time for two handicapped instructors serving 47 handicapped students at a cost of $745.	257
To provide 250 hours of counseling and related services to handicapped vocational students at a cost of $3,000.	3,000
Everett Community College	
To continue to improve special services to handicapped vocational students to assure their success in vocational programs and eventual job placement through the continued employment of one full time vocational handicapped student-coordinator/advisor.	18,022
To provide necessary supplies and related material for handicapped students.	2,784
Edmonds Community College	
To improve basic living skills and prevocational skills for the 10 to 15 handicapped students at Work Opportunities, a local sheltered workshop, by providing part-time instruction to students and support services so students may better succeed in full time employment and ability to live on their own.	3,000
To improve services to between 20 to 30 handicapped vocational students by providing specialized equipment so they may better succeed in vocational programs.	3,340
To improve services to the vocationally handicapped students by purchasing tapes, books and other needed supplies to serve between 20 and 30 vocationally handicapped students.	686

	Federal Share
To improve vocational handicapped students' success in vocational programs by providing tutorial services for 6 to 8 handicapped students; students needing special services will be referred by the college's handicapped coordinator.	1,960
To extend the communication skills of parents of hearing impaired children and a para-professional working with hearing impaired children by offering one 3 credit course during the spring quarter in sign language to serve between 15 and 20 parents and para-professionals.	760
To extend communication skills for older adults who are handicapped by hearing loss by providing instruction in communication skills for between 10 and 15 older adults to better succeed as homemakers or in entering an occupational field.	760
To improve vocational guidance and counseling services to 40 to 45 students with handicaps by employing a counselor to serve as handicapped services coordinator to work directly with handicapped students at 9.2%.	2,140
To provide for vocational faculty or counselors staff development for attendance at workshops pertaining to the handicapped.	500
North Seattle Community College	
To provide special services to students having handicapping conditions, federal vocational act funds will be used to partially pay the salary of (name deleted), watchmaking instructor. This portion of his salary relates to special activities performed just for handicapped students, i.e., special tutorial services, adjustment to counseling for handicapped students, etc. His activities in this program will serve a minimum of eight individuals having handicapping conditions.	3,478
To provide support services for handicapped students enrolled in vocational programs, federal vocational act funds will be used to partially support the salaries of individuals employed in the office of Special Services and Minority Affairs. A minimum of 50 handicapped students will be served during the 1978-79 year.	8,532

	Federal Share
To provide special support services for handicapped students enrolled in vocational programs. Federal vocational act funds will be used to partially pay the salary of one counselor who specializes in handicapped personal adjustment counseling. A minimum of 25 handicapped students will be serviced during the 1978-79 year.	$6,083
Seattle Central Community College	
To provide for vocational guidance and counseling for handicapped students by supporting a staff member in the interpreter training program.	1,430
To provide speech and hearing services for all students enrolled in the program for the deaf and the program for the mildly handicapped by supporting a speech pathologist during the fall quarter.	3,733
To provide vocational guidance and counseling for handicapped students by supporting a staff person in the program for the blind.	1,632
To provide vocational guidance and counseling for handicapped students by supporting a staff member in the program for disabled students.	272
To provide instruction in sign language and related skills to professionals working with deaf students. Approximately 40 classes in the interpreter training program will be offered fall, winter and spring quarters.	16,273
To provide specialized services to students having handicapping conditions by supporting two staff members in the interpreter training program.	9,745
To provide Braille courses to students by supporting instructional staff at a cost of:	5,667
South Seattle Community College	
To provide facility modification (504 requirements) relating to handicapped students.	3,015
To extend and improve the quality and availability of the motor vehicle maintenance program for 18 to 20 handicapped students with training disabilities through salary support plus fringe benefits for an instructor to overcome these handicaps.	1,420

	Federal Share
To extend and improve the quality and availability of the hospitality program for five disadvantaged students through salary support plus fringe benefits for two instructors.	4,950
To extend and improve the quality and availability of vocational education for 28 to 35 language disabled handicapped students in the learning assessment center through salary support plus fringe benefits for four instructors.	3,615
Shoreline Community College	
To maintain quality in existing classes (26) for the developmentally disabled during 1978-79.	6,500
To provide a class for 8 to 15 deaf students during 1978-79.	781
To provide a class for from 6 to 12 blind students during 1978-79.	781
To maintain transportation to and from campus for the 15 to 25 developmentally disabled students each week.	400
To extend counseling services to from 5 to 16 physically handicapped students enrolled in vocational preparatory programs.	7,455
Bellevue Community College	
To provide classes in a sheltered workshop environment for 40 prevocational students in summer and fall quarters by providing salary for instructor.	1,743
To expand and improve specialized services for from 40 to 60 handicapped students in the parent education and early childhood education programs by supporting instructors' salaries and travel.	3,128
To provide note taking services and readers for 15 blind prevocational students.	100
To provide for a three-fourths position for a coordinator of the handicapped to counsel, develop programs, to assist in implementing 504 regulations.	6,430
To provide vocational guidance and counseling services to 85 handicapped to counsel, develop programs, to assist in implementing 504 regulations.	2,033

	Federal Share
To increase the guidance services to approximately 30 prevocational handicapped students through the provision of staff salaries.	$3,845
Highline Community College	
In order to provide services for students having handicapping conditions, instructional supplies and materials will be furnished for handicapped students requiring supplemental instructional techniques.	2,990
In order to provide services for students having handicapping conditions, prevocational and vocational training for 10 to 15 handicapped parents will be established.	7,900
In order to improve vocational guidance and counseling services for handicapped students, one half-time FTE coordinator will be provided to counsel handicapped students participating in vocational programs.	9,000
Green River Community College	
To provide educational services for approximately 150 to 200 handicapped persons at South King County Activity Center from July 1978 to June 1979. To provide services and training to approximately 125 to 175 handicapped persons at the Industrial Skills Center.	10,970
To provide educational services for approximately 150 to 200 handicapped persons at South King County Activity Centers from July 1978 to June 1979. To provide services and training to approximately 125 to 175 handicapped persons at the Industrial Skills Center.	10,970
Fort Steilacoom Community College	
To provide special services for handicapped students: Student preadmission course advising, course adoption, coordination of vocational services, prevocational skills development, special equipment, environmental barrier studies, interagency assistance and referral, public awareness of handicapped needs and in-service education to implement Section 504. Costs are as follows:	
A. Program advisor	7,954
B. Assistant advisor	5,000
C. Individual progress center	9,000
D. Supplies and equipment	1,000
E. Student clerical needs	1,500
To provide special guidance and counseling services for 25% more handicapped students than 1978.	5,512

	Federal Share
Centralia College	
To provide basic job skills to 17 individuals at Lewis County work opportunities (sheltered workshop) by providing one half annual FTE for adding a program in the Morton area.	$8,051
To provide job counseling services to 10 individuals at Lewis County work opportunities.	1,500
Olympia Technical Community College	
To provide an instructor/coordinator to coordinate and teach basic living skills, occupational orientation, and prevocational education to individuals handicapped due to physical and mental conditions.	(?)
Lower Columbia College	
To provide special classes to on-campus handicapped vocational students so that at least 15 students may enroll and effectively complete current vocational programs.	9,122
To provide special instructional assistance for 5 to 10 handicapped students currently enrolled in vocational programs so that they can continue.	2,136
Clark Community College	
To provide excess cost for program analysis and development for handicapped.	$2,449
Excess cost to provide cooperative work experience to 6 to 10 handicapped.	2,476
To provide for cost of specialist vocational counselor to serve 24 to 35 handicapped students.	15,041
Wenatchee Valley College	
To maintain a program of teaching survival skills such as cooking, money management, driving and consumer education for 80 to 100 handicapped persons in the college district. Certification of the availability of local and state matching funds is attached.	10,237
Yakima Valley College	
To develop and hold educational training workshop for handicapped students. 30 to 50 persons will be served.	1,264
To provide developmental education at Yakima Good Will on a part day basis for 10 to 12 handicapped students.	3,000

	Federal Share
To provide at Yakima Adult Education Center, home skills training for 5 to 7 handicapped students.	$4,000
To provide at Yakima Adult Education Center, clerical skill training for 8 to 10 handicapped adults.	7,000
To provide at Ellensberg Adult Education Center, clerical skill training for 2 to 3 handicapped students.	2,391
To provide at Sunnyside Adult Education Center, clerical training for 4 to 6 handicapped students.	3,000
Spokane Community College and Spokane Falls Community College	
To provide instructional services to clients at Lakeland Village.	26,158
To provide services for the physically disabled student at Spokane Falls Community College.	757
To provide facilities for EMR students at Jessie Webb in Colville.	14,400
To provide instructional services for 60 EMR students at Field school.	45,770
Counseling for handicapped students.	37,795
Big Bend Community College	
To maintain current level of specialized clinic instruction for 16 handicapped students. Note: Handicapped condition will be determined by physical problems that hinder students' success in programs without special assistance.	800
To extend handicapped instruction programs by initiating prevocational education and new vocational skills class to provide vocational training for handicapped students not enrolled in regular programs.	3,219
Through specialized program counseling the number of handicapped students in programs may be improved to 30 students in 1978-79.	1,005
To actively seek out and counsel with potential and prevocational handicapped students not in the mainstream of education and to develop their vocational education interest and potential and to initiate a vocational orientation class if feasible.	550

	Federal Share
Consultive service to faculty relative to handicapped training.	$ 400
Columbia Basin College	
To maintain the support of the sheltered workshop at the Cerebral Palsied Center serving approximately 70 handicapped students per quarter at a salary cost of:	10,527
To develop and implement a program to conduct a census of handicapped students, identifying their particular needs, and providing guidance and counseling. The number of students served cannot be determined until the census has been completed. The federal share of the cost will be approximately:	5,000
To provide travel funds for personnel attending handicapped workshops at a cost of:	150
Walla Walla Community College	
Vocational training for 8 to 12 handicapped students.	1,000
To provide vocational guidance and counseling for handicapped students as a result of operating a vocational assessment lab. Approximately 20 to 30 students will be served.	12,314
Whatcom Community College	
To provide group instruction to developmentally disabled individuals through local sheltered workshop agreements in life and home skills. Twenty to twenty-five students will be served for three quarters. Money will be used to pay faculty salaries and fringe benefits.	7,726
Tacoma Community College	
Coordinator for handicapped center at three-fifths time and one clerical assistant to the handicapped center, cost plus benefits, total:	14,981